User Manual

ACE V1 Thermal Printer

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Contents

I. Instructions....3
1.1. Safety warnings....3
1.2 Precautions....3
II. Main features....4
III. Instructions on technical specifications....4
IV. Installation and operation of the printer....6
4.1 Unsealing of the printer....6
4.2 Connection method of the printer....6
4. 3 Installation of paper roller....7
4.4 Installation of label paper....8
V. Switches, buttons and indicator lights of the printer....8
5.1 Power switch....8
5.2 Self-check test of the printer....9
VI. Cashbox port of the printer....10
VII. Printer cleaning....10
7.1 Clean the printer head....10
7.2 Cleaning sensor....11
7.3 Printing rubber roller cleaning....11
VIII. Paper jam elimination method....12
IX. Malfunction elimination....12
9.1 Indicator light on the control penal fail to work....12
9.2 Indicator light function well, but the printer fail to work....12
X. Printer driver....13
10.1 Driver installation under Windows....13
10. 2 Direct drive of serial ports....13
XI. NFC function....13

I. Instructions

ACE V1 printer is POS directly thermal receipt printer, which is easy to operate and cost-effective. They are widely used in such various fields as shopping malls, supermarkets, hospitals, canteens, banks, gas stations, tollbooth of roads and bridges, etc.

Safety notes:
Before using the printer, please read the following instructions carefully and adherence to the reference strictly.

1.1. Safety warnings

Warning: Don't touch the cutter or tearer of the printer.
Warning: The printer head is exothermic, so don't touch it and it's surrounding parts during the process of printing or printing has just finished.
Warning: Don't touch the surface of the thermal printer head and fittings lest the printer head may be broken by static electricity.
Warning: The product is only applicable under non-tropical climate.

⚠ Warning

It's A level product, which may cause radio disturbance in life. Under such circumstance, users may need to take proper and feasible measures to cope with the disturbance.

1.2 Precautions

Printer should be installed in a secure place to avoid vibration and shock	Don't use or store the printer under high temperature, high humidity or seriously polluted places.
Connect the power adapter of the printer to a properly grounded outlet to avoid using the same socket with facilities such as large electrical machine or other equipment that can lead to the power supply voltage fluctuation using the same socket.	Avoid water or conductive material (such as metal) entering into the printer. Once happened, turn off the power supply immediately.
The printer shall not work without paper, otherwise the printing rubber roller and the thermal print head will be damaged severely.	If you don't use the printer for a long time, please cut off the power supply of the power adapter.
Users shall not remove the printer for repair or reconstruction.	The power adapter will only use special designed power adapter distributed randomly.
Please take good care of the manual for reference.	

II. Main features

350mm/s high speed printing	Support human error reporting function
Support cashbox driving, NFC function; cloud printing is available.	Attractive appearance, fashionable and commercial
Reasonable structure, convenient in operation and maintenance	Installed with data buffers, printing data can be received when printing
Support USB, serial port, Ethernet, and cashbox port	Characters can be printed in amplified, bold and underline form. Character space between lines and in the left and right margins can be adjusted to be printed.
Support download of bitmap of different density and graphical printing	Support the printing of linerless paper, black-mark paper, label paper, continuous paper
Low power consumption and operating cost (ribbon and ink cartridges are not needed)	Compatible with the ESC/POS printing instruction set and TSC instruction set

III. Instructions on technical specifications

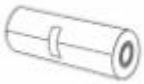
Printing method	Thermal printing in lines(QR code can be printed)
Width of the printing paper	79.5±0.5 mm
Valid printing width	72 mm
Valid resolution ratio	203dpi (8points/mm）
Printing speed	350mm/s MAX
The property of printer head	Printing density: 504 points/lines or 576 points/lines Service life: 100 km
Printer interface	 Cashbox power source (RJ-11socket with 6 lines, output DC 24V/1A power signal to drive the cashbox)
Printing characters	ASCII code character set12x24 points, 1.25 (Width) x 3.00 (Height) mm
Cuter	Support reverse function
NFC	Support

Paper available	Linerless paper, black-mark paper, label paper, continuous paper	
Cloud printing	Options	
	Chinese character library of international first and second level	24x24 points， 300 (width) x 3.00 (height) mm
	International code page	Support international languages such as PC437、Katakana、PC850、PC860、PC863PC865、WPC1252、PC866、PC852、PC858etc.
	Barcode printing	Support the barcode printing of UPC-A、UPC-E、EAN(JAN)13、EAN(JAN)8、CODE39、CODABAR、ITF、CODE93、CODE128, etc.
Printing paper index	Type of the printing paper	Thermal printing paper
	Recommended thermal paper roller	Specification: AF50KS-E Manufacturer: Jujo Thermal Oy(Finland)
		Specification: TF-50KS-E Manufacturer: Nippon Paper Industries CO.,Ltd
	Notes: 1. It is suggested to use the recommended thermal printing paper or thermal printing paper of the same quality, otherwise printing quality will be affected and the service life of thermal printer head will be shortened. 2. Please don't choose paper roller with the end stuck on the shaft of the roller, otherwise the printer may be damaged. 3. Printing paper polluted by chemicals or oils is likely to fade and affect the printing effect. 4.Don't rub the surface of the printing paper with hard materials, otherwise it may cause fade. 5. When temperature exceeds 70°C, the paper will fade, so it is important to pay special attention to the impact of temperature, humidity, and illumination.	
Reliability of the printer	6 x 10^6 lines（MCBF）	
Instruction type adopted (compatible with ESC/POS printing instruction set)	Characters printing	Support ANK character, self-defined character, double width or height character, the space of characters can be adjusted.
	Bitmap Printing	Support download of bitmap of different density and graphical printing
Power adapter of the printer	Adapter input voltage	AC 110V/220V, 50~60HZ
	Adapter output voltage	DC 24V/2.5A
	printer input voltage	DC 24V/2.5A
Weight of the printer	About 1.4 kg (not including paper roller)	
Shape and dimension	200 (length）x 146 (width）x 140 (height）mm	

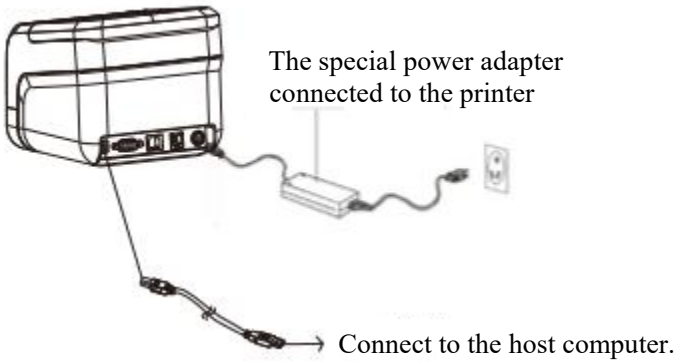
Environmental adaptation	Operating temperature: 0~40°C	Operating relative humidity: 20~70%
	Storage temperature: -20~70°C	Storage relative humidity: 5~95%

IV. Installation and operation of the printer

4.1 Unsealing of the printer

Main engine	Power adapter	Power cord	Quick install guide
 Paper roll	Disk	Communication cable	Warranty card
Parts inspection: please check the whole set of parts before opening the box. If there are any missing parts, please contact the supplier or manufacturer.			

4.2 Connection method of the printer



The special power adapter connected to the printer

Connect to the host computer.

Please use the randomly attached special power adapter. Connection diagram as shown above:

Notes

1. First plug in the printer power plug DC24V, then connect AC220V power supply, after that open the power source switch. Pay attention to the order, otherwise the machine might be damaged.
2. Using inappropriate power adapter will affect the printing quality and even damage the printer.
3. Don't plug the telephone line to the cashbox port, otherwise both the printer and the telephone are likely to be damaged.
4. When plug in or pull out the printer power cord, please hold the arrow of the printer power cord (don't hold the flexible line plug of the printer power cord).
Pull the flexible plug of the printer power cord or turn the printer power cord forcefully may cause damage to the printer.

4. 3 Installation of paper rollers

ACE VI printer uses 80.0 mm thermal paper roller, it's convenient to put paper into the machine as it adopted a pro tipping paper structure.
Thermal paper installation method is as follow:

Open the cover and turn the lever open the front cover of the printer	 Make sure the front cover has been opened
Correct direction Wrong direction Make sure the printing side of the paper roller face forward and put in the paper roller; pull out the paper roller ahead of the front cover.	 Close the front cover of the printer, and press forward gently until a sound of lock is heard.

4.4 Installation of label paper

The installation method of thermal label paper (MAX8.0 mm) is as follow:

Open the cover and turn the lever open the front cover of the printer	 Make sure the front cover has been opened
correct direction wrong direction As is shown in the picture, put label paper roller onto paper shaft, adjust the washer and make sure the paper roller on the left; pull out the paper roller ahead of the front cover.	 Close the front cover of the printer, and press forward gently until a sound of lock is heard.

V. Switches, buttons and indicator lights of the printer

5.1 Power switch

Power switch is used to turn on/off the printer. The power switch of the printer lies on the right side of the printer. Press the switch for several seconds, the printer will be turned on. When the printer in on, do the same and it will be off.

⚠ , Note
Switch can only work when the printer is connected to power source

Set the default value when the ACE V1 printer leaves factory
Settings can be changed to meet the special needs of users.DIP switch on the bottom of the printer is to adjust the settings of the printer.

Settings of each DIP switch

Switches	Functions	On	Off
1	Cutter	No cutter	Cutter
2	Voice prompt	Turn on the voice buzzing	Turn off the voice buzzing
3	Printing density	High density	Normal density
4	24 character mode	No Chinese	With Chinese
5	printed characters of each line	42	48
6	Select the cashbox	Open the cashbox	Close the cashbox

Transmission speed (serial port valid) (refer to the table below)

Transmission Speed (bps)	SW-7	SW-8
38400	ON	ON
115200	OFF	ON
9600	ON	OFF
19200	OFF	OFF

5.2 Self-check test of the printer

Self-check test can detect whether the printer works well. If it can print out self-checking list sample correctly, it shows that the printer is in good condition except for its connection with the host interface. Otherwise repairing is needed.

Self-check test will print out the NO. of software version, printing density, interface form, English characters and part of Chinese characters sequentially.

The operation method of self-check test is: press down the FEED button and turn on the power source of the printer after connecting the printer to the computer. The printer will begin reset detection. After that, release the FEED button within 5 seconds, then the printer will begin the self-check test and print out self-checking list sample.

VI. Cashbox port of the printer

Cashbox port of the printer uses Rj-11, 6-line socket, output DC 24V/1A power signal to drive the cashbox. Plug the RJ-1 Crystal head of the cashbox into the cashbox port, then the cashbox can be opened through the printer.

The definition of Pin function of Cashbox port of the printer is as follow:

Pin NO.	Signal	Flow direction
1	No	No
2	Structurally	Output
3	No	No
4	Cashbox driving signal	Output
5	No	No
6	No	No

VII. Printer cleaning

7.1 Clean the printer head

When one of the situations occur, the printer head shall be cleaned

Unclear printing

Part of the printing side is unclear

Loud noise in paper feed

Steps of cleaning the printer head
1. Turn off the power of the printer, open the upper cover, if there is paper, remove the paper.
2. If the printing is finished, please wait for the printer head to cool off;
3. Dip the soft cotton cloth into absolute ethyl alcohol(wring up) to remove the dust and taint of printer head;
4. Wait for the complete volatilization of absolute ethyl alcohol, close the upper cover and test-run printing again.

7.2 Cleaning sensor

When one of the situations occur, the PE Sensor shall be cleaned

During printing, the printer will stop printing occasionally and give a warning of lack of paper.

No warning when lack of paper

Steps of cleaning the PE Sensor
1. Turn off the power of the printer, open the upper cover, if there is paper, remove the paper.
2. Dip the soft cotton cloth into absolute ethyl alcohol(wring up) to remove the dust and taint of printer head;
3. Wait for the complete volatilization of absolute ethyl alcohol, close the upper cover and test-run printing again.

7.3 Printing rubber roller cleaning

When one of the situations occur, the printing rubber roller shall be cleaned

Unclear printing

Part of the printing side is unclear

Loud noise in paper feed

Steps of cleaning the printing rubber roller
1. Turn off the power of the printer, open the upper cover;
2. Dip the soft cotton cloth into absolute ethyl alcohol(wring up) to remove the dust and taint of printing rubber roller;
3. Wait for the complete volatilization of the cleaner, close the upper cover.

⚠ Notes

1. In daily maintenance, make sure the power of the printer is shut down.
2. Don’t touch the surface of the printer head by hand and metal items. Don’t use tweezers and other tools to hurt the printer head, printing rubber roller, and the surface of the sensor.
3. Don’t use gasoline, acetone or other organic solvents.
4. Wait for the complete volatilization of absolute ethyl alcohol, turn on the power and continue the printing

VIII. Paper jam elimination method

When paper jam occurs, shut down the power of the printer first, then open the upper cover of the printer. After the cooling down of the printer head, remove the paper stuck in the printer, and feed paper correctly and close the upper cover. Select the recommended paper or paper of the same quality, paper confirm to the specified width, the chances of paper jam will be greatly reduced.

IX. Malfunction elimination

When malfunction of the printer occurs, refer to the chapter to deal with corresponding problems. If malfunction remains, please contact with the dealer or manufacturer.

9.1 Indicator light on the control penal fail to work

Check whether the power cord correctly inserted into the printer, power adapter and power socket. Check whether the printer power switch is turned on or not.

9.2 Indicator light function well, but the printer fail to work

Run the self-check to test whether the printer is working properly. If the printer is not able to do self-check, please contact the dealer or technical service personnel.

If self-check functions well, check the following items

1. Check connection on both ends of the interface between the printer and the computer.
At the same time confirm whether the connection meets both the specification and requirements of the printing machine and the computer.
2. Data transmission settings between the printer and computer may be different. You can use the self-check to print out the printer interface settings. If the printer fail to work, please contact with the dealer or technical service personnel.

X. Printer driver

There are two kinds of driving mode running ACE V1, one is to install driver directly under Windows9x/ME/2000/XP, another is to drive the printer with internet access directly.

10.1 Driver installation under Windows

Add printer to Windows and assign the driving document in the driving disk to Windows. You can start to print by executing printing order in the program. Under this way, it is printed by the driving program of Windows printer transferring characters to graphics dot-matrix.

10. 2 Direct drive of serial ports

In this way, there is no need of driving program, but outputting characters to port directly and hard-character base within the printer can achieve the transformation and printing of characters. Using this method, the way of printing changed from page printing to line printing, which is easier to control.

To use direct drive of serial ports, instruction set is need to control the printing, and ACE VI printer has integrated the ESC/POS/TSC command set.

XI. NFC function

Put the cellphone with Rongta APP and NFO function close to the top of ACE VI printer, open the APP and connect it with ACE V1 printer.

Note: usage is only confined to types with NFC function.

RONGTA

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